Cruise Report

Jane Yarn - 08 -00
15-18 August 2000

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Submitted to:
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Introduction

In April 2000, the National Centers for Coastal Ocean Science (NCCOS) initiated a new project funded by the National Marine Sanctuary Program: Support of Monitoring Activities and Site Characterization at Grays Reef National Marine Sanctuary (GRNMS). Three NCCOS Centers are involved in the work: the Center for Coastal Fisheries and Habitat Research (CCFHR), the Center for Coastal Environmental Health and Biomolecular Research (CCEHBR) and the Center for Coastal Monitoring and Assessment (CCMA).

The overall project has eight goals.

1) Participate in GRNMS fish monitoring activities including work in adjacent deeper areas.
2) Analyze fish monitoring data for changes in abundance and species composition over time (1995-1999).
3) Assess adequacy of fish monitoring sampling design for detecting changes in abundance and composition of fishes over time.
4) Determine the importance of non-reef habitats to juvenile stages of reef fishes and evaluate the linkages between non-reef and reef habitats.
5) Provide an assessment of the condition of macroinfanual assemblages, concentrations of chemical contaminants in sediments, and contaminant body-burdens in target benthic species of the GRNMS.
6) Provide customized satellite-derived sea surface temperature products to assist research and management activities within GRNMS.
7) Determine the species of fish that spawn in the vicinity of GRNMS.
8) Evaluate larval transport to and dispersal from GRNMS to surrounding areas.

The research conducted during JY-08-00 contributed to goals 4, 7 and 8.

Scientific Objectives

The scientific objectives of the cruise follow the scientific goals of the project overall.

1) Collect CTD measurements and ichthyoplankton samples for examining spawning and larval transport within the vicinity of GRNMS.
2) Collect beam trawl samples over non-reef habitats to quantify habitat characteristics and to examine juvenile fish, their predators and prey associated with those habitats.

A 1 m Ichthyoplankton Sled and CTD (SBE-19) collections were planned on an along-shelf transect and a cross-shelf transect that bisected GRNMS. Beam trawl (2 m) work was also planned along a cross-shelf transect which included four stations around the perimeter of GRNMS (Fig. 1). CTD and 1 m Ichthyoplankton Sled collections were planned at each beam trawl station.

Owing to weather, the along-shelf and cross-shelf CTD and ichthyoplankton collections were not made. CTD and ichtyoplankton collections were made at beam trawl stations, so cross-shelf ichthyoplankton information was obtained. Both sets of collections are planned for an October cruise aboard the NOAA Ship FERREL.

Cruise participants were Harvey Walsh, Roger Mays, Sabrina Varnum, and Sarah Shoffler (NOAA NOS CCFHR), and Tom Zemanski (private contracter).

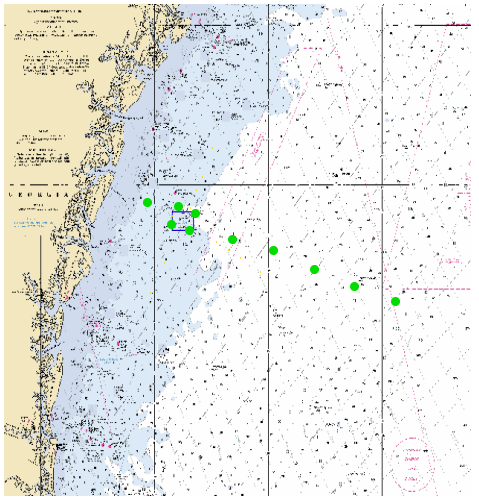

Figure 1. Map showing location of Beam Trawl/CTD / Ichthyoplankton Sled stations and GRNMS boundary.

Accomplishments

Beam Trawl - A total of 27 beam trawl tows were made at nine sites. The furthest offshore site was not sampled (Fig. 1). A summary of beam trawl sampling is provided in Table 1.

A number of small squid were collected - tentative identification is long-fin squid. Large paneid shrimp were also caught at some stations. A wide variety of flatfish were caught, similar to the April and June cruises and large numbers of newly settled serranines were collected - tentative identification is *Diplectrum formosum*

Table 1. Summary of Beam Trawl collections made during JY-08-00.

Cruise	Sta	Tow No	Day	Month	Year	Gear	Mesh (mm)	Time (HHMM)	Duration (MSS)
JY-08-00	1	1	17	8	2000	2m beam trawl	3	402	500
JY-08-00	1	2	17	8	2000	2m beam trawl	3	414	500
JY-08-00	1	3	17	8	2000	2m beam trawl	3	427	500
JY-08-00	2.1	1	16	8	2000	2m beam trawl	3	2255	500
JY-08-00	2.1	2	16	8	2000	2m beam trawl	3	2311	500
JY-08-00	2.1	3	16	8	2000	2m beam trawl	3	2338	500
JY-08-00	2.2	1	16	8	2000	2m beam trawl	3	2106	500
JY-08-00	2.2	2	16	8	2000	2m beam trawl	3	2119	500
JY-08-00	2.2	3	16	8	2000	2m beam trawl	3	2134	530
JY-08-00	2.3	1	17	8	2000	2m beam trawl	3	34	500
JY-08-00	2.3	2	17	8	2000	2m beam trawl	3	50	500
JY-08-00	2.3	3	17	8	2000	2m beam trawl	3	102	500
JY-08-00	2.4	1	17	8	2000	2m beam trawl	3	157	500
JY-08-00	2.4	2	17	8	2000	2m beam trawl	3	216	500
JY-08-00	2.4	3	17	8	2000	2m beam trawl	3	231	500
JY-08-00	3	1	15	8	2000	2m beam trawl	3	2154	500
JY-08-00	3	2	15	8	2000	2m beam trawl	3	2209	500
JY-08-00	3	3	15	8	2000	2m beam trawl	3	2226	600
JY-08-00	4	1	16	8	2000	2m beam trawl	3	18	500
JY-08-00	4	2	16	8	2000	2m beam trawl	3	35	500
JY-08-00	4	3	16	8	2000	2m beam trawl	3	50	500
JY-08-00	5	1	16	8	2000	2m beam trawl	3	246	500
JY-08-00	5	2	16	8	2000	2m beam trawl	3	304	500
JY-08-00	5	3	16	8	2000	2m beam trawl	3	321	500
JY-08-00	6	1	16	8	2000	2m beam trawl	3	510	500
JY-08-00	6	2	16	8	2000	2m beam trawl	3	527	500
JY-08-00	6	3	16	8	2000	2m beam trawl	3	545	500

Table 2 Summary of 1 m Ichthyoplankton Sled collections and CTD casts made JY-08-00.

Cruise	Sta	Day	Mo	Year	Gear	Mesh (mm)	Time (HHMM)	Fishing Time	CTD	Meter End	Meter Begin
JY-08-00	1	17	8	2000	1m sled	0.333	348	330	yes	981529	977003
JY-08-00	2.1	16	8	2000	1m sled	0.333	2234	604	yes	976676	971250
JY-08-00	2.2	16	8	2000	1m sled	0.333	2056	300	yes	971258	967362
JY-08-00	2.3	17	8	2000					yes		
JY-08-00	2.4	17	8	2000					yes		
JY-08-00	3	15	8	2000	1m sled	0.333	2108	1000	yes	938272	927746
JY-08-00	4	16	8	2000	1m sled	0.333	2	500	yes	942608	938287
JY-08-00	5	16	8	2000	1m sled	0.333	228	750	yes	952290	942607
JY-08-00	6	16	8	2000	1m sled	0.333	454	700	yes	960152	952290
JY-08-00	7	16	8	2000	1m sled	0.333	731	730	yes	967364	960153

CTD Data - A CTD cast was made at each of the 9 stations (Figure 1). Across shelf profiles of temperature, salinity and sigma-t are shown in Figure 2. A summary of CTD data collected is provided in Table 2.

Ichthyoplankton Sled Collections - Sled collections were made at 8 stations, all the stations shown in Figure 1 excluding two around GRNMS. Summary of sled data collected is provided in Table 2.

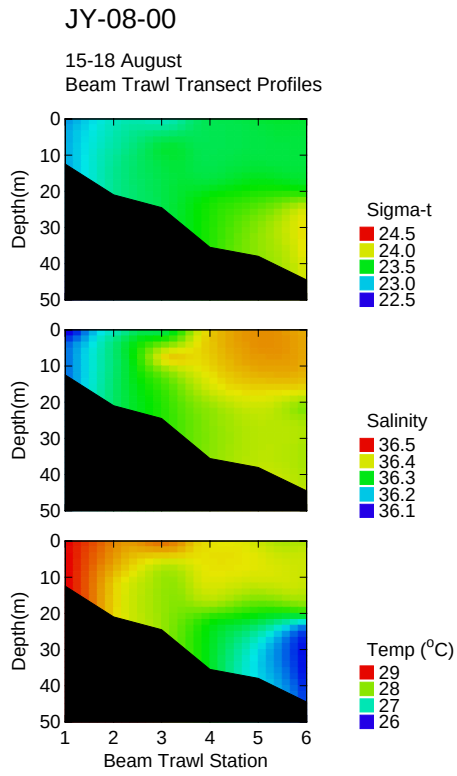

Figure 2. Cross-shelf sections of sigma-t, salinity and temperature made during beam trawl transect during 15-18 August 2000. X-ordinate represents 50 nm.

Acknowledgements

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